CEC Statewide Plan Discussion Questions Jan 28, 2013
San Diego Regional Working Group Comments

General Questions

In what ways can the state plan assist and support regional PEV planning efforts?

The State should support regional PEV readiness efforts by creating consistent standardized language promoting PEVs to be adopted at the local level and defining PEVs as a GHG mitigation measure under SB 375. While not directly related to the state plan, the state should consider funding regional efforts beyond the 2013 timeline.

Across the state, local governments will be making updates to zoning ordinances, building codes and their General Plan. Due to resource constraints, many local governments lack adequate resources to develop code language that promotes PEVs. Therefore, the state working with regional planning groups has the opportunity to develop PEV code templates that local governments can leverage when making changes on local level.

In each of the regions funded by the CEC preparing PEV Readiness Plans (Plan), there is reference to integrating the Plan with local efforts to promote SB 375 through the Sustainable Communities Strategies (SCS). Through our experience in San Diego we have identified a significant challenge to this integration. Under the current SCS, alternative fuels, like PEVs, are not included in helping the region meet ambitious GHG reduction targets. While the SCS identifies strategies to promote PEVs throughout the region, these strategies are not tied to GHG reductions. The state plan can assist regional efforts by linking PEV planning efforts (e.g. infrastructure deployment) to concrete GHG reductions and sharing these tools with local governments. In addition, the CEC should also work with the California Transportation Commission, the Governor's Office of Planning and Research to ensure that alternative fuel planning is supported as a GHG reduction measure under the implementation of SB 375.

Currently, the regions across the state are funded for the remainder of 2013 to continue PEV planning efforts. We believe the market needs support beyond this year, so we recommend that the State continue to fund local resources and PEV specialists. For example, each of the Regional Councils will develop a strategy to accelerate PEV adoption in workplaces and private and public fleets. While outlining an approach provides the first step in addressing this need, without additional resources this strategy may never be implemented. Thus it is important to identify and secure funding to execute this strategy as well as many of the others being developed in these plans.

Additional funding will also assist local agencies and municipalities by continuing to address the barriers highlighted in the PEV regional readiness plans. The funding currently provides a unique opportunity that encourages a wide array of PEV stakeholders (e.g. businesses, local governments, utilities, etc.) to unilaterally address PEV market barriers.

Should there be certain templates or standard measures used for each CEC-funded local plan, to ensure that the local plans can fit into the larger statewide plan?

Local efforts will need to be developed to create a plan that fits local needs and conditions. However a realistic statewide plan would include guidance on barriers that would be best served by statewide mandates. In other words, EVSE and PEV friendly policies that are adopted by the State and implemented locally. For instance, these mandates would include, but are not limited to, a statewide

ADA accessibility policy for PEV parking and requiring EVSE "pre-wire" requirements in the statewide California electrical code.

In addition, the statewide plan has the opportunity to leverage PEV siting tools currently developed by universities throughout the state. The state plan should identify which tools are the most effective and work with the regional Coordinating Councils to implement these tools on the local level. Sharing these best practices will help to enable more consistent planning for EVSE locations. In addition, regional Coordinating Councils will provide a valuable feedback loop to the developers of these siting tools (e.g. academics) regarding their effectiveness.

Sharing Planning Data/Best Practices

What venues need to be established for regions to share information about infrastructure planning?

Overall there is a need for information on the regional level to be coordinated at the state level. For the past year the PEV Collaborative staff has played an important role in coordinating regional and statewide PEV readiness planning efforts through the California PEV Readiness Coordinating Council (California Council). In addition to the PEV Collaborative, the California Council also includes representatives from six of the key markets across the state—Bay Area, Los Angeles, San Diego, Central Coast, Central Valley and Sacramento. This Council has been effective in providing a venue to share best practices and lessons learned among the regions as well as with state agencies.

However, it is important to emphasize that funding from the DOE that established this infrastructure expired at the end of 2012. Each of the six regions represented on the California Council also received funding from the CEC to continue to develop and implement best practices on a regional level. However, CEC funding did not extend to the PEV Collaborative, thus their continued involvement and the leadership of the California Council is uncertain. CCSE recognizes the critical role that the PEV Collaborative has played and the gap that would exist if the California Council were to end. Therefore, the statewide plan should address how this critical role will be filled now that the DOE funding has expired.

In addition to identifying a coordinating agency, it would also be helpful to create a California PEV Readiness website that includes webinars and an on-line map that would work as the "go to" source for all PEV planners in the state. This website could be housed on the CEC website or on existing websites like the PEV Collaborative. In addition to the website, there should also be regular web-ex meetings or webinars and an interactive on-line map that includes user friendly and easy to read information on local plans.

In addition to local government and industry, what other groups (academia, NGOs, property owners) are important in California PEV planning?

Other groups that are important PEV Planning include Universities and Colleges (academic research institutes on the PEV market and technical training at local community colleges), property management firms, parking industry (e.g. Ace Parking), building and facility manager associations, HOA's (if large HOAs exists), large real estate firms, regional agencies (e.g. local Cal Trans District representatives, airport/port authorities), military and large employers.

CEC Statewide Plan Discussion Questions Jan 28, 2013
San Diego Regional Working Group Comments

EVSE Interoperability:

Should measures be taken to ensure that any PEV driver can use any charging station, regardless of their network membership? If so, what measures could ensure such access?

Yes, this is a critical issue and the State should take a leadership role in creating policies (e.g. regulation) that would require interoperability across the state. In the San Diego region, the Regional Electric Vehicle Infrastructure Working Group overwhelming supports EVSE interoperability. Like cell phones, access to charging should not be limited to a particular subscription. Interoperability is needed to make the systems more enhanced and user friendly. In addition all charging stations should have credit card swipe capability.

What role should government play ensuring interoperability?

Funding from state should support those efforts for interoperability. In this vein, all charging stations that are funded from the state should be required to be interoperable (e.g. include a credit card swipe). Recent examples of state funding going to non-standard systems (e.g. funding OEM manufacturing for vehicles not in compliance with U.S. J 1772 connector standards) work against the interoperability issue for the consumer and add expense to a system to provide general access.

State Support for EVSE Installations

Is financial support needed from the state for EVSE installations in the following locations?
(See narrative of each short answer below)

- Residential
  - Maybe
- Workplace
  - Yes (very critical)
- Multiunit Dwellings
  - Yes
- Public
  - Yes

If support is needed, what type of investment should the state make (e.g. incentives vs. loans)? In addition should locations be prioritized (residential vs. workplace)?

The EV Project provided the first stage of infrastructure in the region using incentives. The results are mixed and this is primarily due to the fact that Blink did not meet its original installation numbers. That said the region has learned a significant amount from the EV Project however there appears to be community resentment towards not fulfilling the original project goals while using public funds for public infrastructure. On the other hand, the EV Project was successful in driving residential installations. Based on that, the San Diego region would benefit from continuing incentive programs for residential EVSE installations. **However, incentives**

(cash/loans, etc.) should be made to the host – not the installer. They should be prioritized to providing the greatest level of service to unserved/underserved areas of the community.

Also of high priority is the continued investment of EVSE installation programs for multi-unit dwellings (MUDs). Approximately 50-66% of residential units in large metropolitan are MUDs. In the San Diego region, specifically downtown, there is a need for support towards overcoming the barriers associated with MUDs (e.g. possible lack of electrical panel capacity, HOA resistance, available parking space, and "rent vs. own" scenario).

Funding for workplace charging, especially large employers (e.g. 200+) should take precedent for state funding. This entails incentives for employers providing workplace charging. This is important because of the higher adoption of plugin hybrid EVs that are being purchased that would likely require a recharge at work.

For owners of plug in hybrid electric vehicles (PHEVs) with a 40 mile all electric range, demand for regular charging outside the home could enable drivers to maximize their use of the vehicle's electric power capabilities given that many might not be able to cover a commute within the 40 mile range. Unless motivated by sustainability or other considerations, a PHEV owner may not be be willing to pay more than they would pay to run their vehicle on gas. At a gasoline efficiency of about 37-50 mpg, the cost of running the PHEV on gas is equivalent to paying about $0.75 -$1.00 for an hour of charging. In contrast current fees for public and workplace charging are higher than what a BEV will charge at home off-peak.

Therefore, this data suggest that PHEVs will have a higher utilization workplace charging compared to a BEV with a 100 mile range (see the table below).

Table 1 Cost of PEV Owners Alternatives to Paying for Daily Non-residential Charging

Vehicle Scenarios	Fueling Alternative	On-board Charger (kW)	Fueling Alternative ($/hour equivalent)	Current Public Charging Range ($/hour)
BEV 100 or BEV 300	Residential Electricity Rates	3.3	$0.30-$0.65[1]	$1.00-2.00
		6.6	$0.60-$1.30[2]	$1.00-2.00
PHEV 40	Gasoline	3.3	$0.75-$1.00[3]	$1.00-2.00

[1] Cost per Hour = ($0.08-$0.17)/kWh*7.5 kWh/hour =$0.30-$0.65

[2] Cost per Hour = ($0.08-$0.17)/kWh*3.75 kWh/hour =$0.60-$1.30 per hour

[3] Cost per Mile = $3.80/gallon*1 gallon/(37-45) miles = $0.08-$0.10 per mile. Cost per Hour = ($0.08-$0.10)/mile*3 miles/kWh*3.3 kWh/mile =$0.75-$1.00 per hour